C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.2.e 2 O'Clock (PEER 11) Mode 24 Tests

C-A-OPM Procedures in which this Attachment is used.		
4.120.2		

Hand Processed Changes

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Collider-Accelerator Department Chairman   Date

V. Castillo

4.120.2.e 2 O'Clock (PEER 11) Mode 24 Tests

PASS SEMI-ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title:_____ **Checksum:** _____

Division B Software Filename and Checksum: Title:_____ **Checksum:** _____

<u>**Initial testing complete**</u>**:**

Test Team Leader's Name (Print): _____ **Life Number:** _____

Test Team Leader's Name (Sign): _____ **Date: ____/____/_____**

<u>**Acceptance test procedure complete (following repairs and retesting if required)**</u>**:**

Test Team Leader's Name (Print): _____ **Life Number:**_____

Test Team Leader's Name (Sign): _____ **Date: ____/____/_____**

<u>**Test results reviewed by**</u>**:**

Safety Section Head's Name (Print):_____ **Life Number:** _____

Safety Section Head's Name (Sign):_____ **Date: ____/____/_____**

<u>**Test results accepted by Radiation Safety Committee**</u>**:**

RSC Member's Name (Print):_____ **Life Number:** _____

RSC Member's Name (Sign):_____ **Date:____/____/_____**

1.1 **Verify necessary conditions for Mode 24**

       PLACE   **Peer 11** in **Mode 16**

☐ **VERIFY**   **Peer 11** is in **Controlled Access**   **MODE 16**

       RESET   **Peer 11 gates:** 1GS1, 1EL1, 1GI1, 2MD1, 2GE1, 2MD2, 2GI1, 2GE2, 2MD3, 2EL1, 2ED1, and 3GI1

☐ **VERIFY**   **Peer 11 gates:** ☐ 1GS1, ☐ 1EL1, ☐ 1GI1, ☐ 2MD1, ☐ 2GE1, ☐ 2MD2, ☐ 2GI1, ☐ 2GE2, ☐ 2MD3, ☐ 2EL1, ☐ 2ED1, ☐ 3GI1 are   **RESET**

       SWEEP   **Peer 11 Zones:** 1Z1, 2Z1, 2Z2

☐ **VERIFY**   **Peer 11 Zones:** ☐ 1Z1, ☐ 2Z1, ☐ 62Z2 are   **SWEPT**

       PLACE   **Peer 11** in **Mode 24**

☐ **VERIFY**   **Peer 11** is in **No Access**   **MODE 24**

       RECORD   **Duration [_____ secs]** of **Beam Imminent Alarm**

☐ **VERIFY**   **Red No Access Light** at Gates: ☐ 2GE1, ☐ 2GE2 is   **ILLUMINATED**

       PLACE   **Peer 11** in **Mode 16**

☐ **VERIFY**   **Peer 11** is in **Controlled Access**   **MODE 16**

       REMOVE   **Reset** from gate **2GE2**

☐ **VERIFY**   **MCR** sees gate **2GE2** is   **NOT RESET**

       PLACE   **Peer 11** in **Mode 24**

☐ **VERIFY**   **Attempt** to place **Peer 11** in **No Access Mode**   **FAIL**

       RESET   Gate **2GE2**

☐ **VERIFY**   **MCR** sees gate **2GE2**   **RESET**

       PLACE   **Peer 11** in **Mode 24**

☐ **VERIFY**   **MCR** sees **Peer 11** in **No Access**   **MODE 24**

       PLACE   **Peer 11** in **Mode 16**

☐ **VERIFY**   **Peer 11** is in **Controlled Access**   **MODE 16**

       REMOVE   **Sweep** from zone **1Z1**

☐ **VERIFY**   **MCR** sees zone **1Z1** is   **NOT SWEPT**

       PLACE   **Peer 11** in **Mode 24**

☐ **VERIFY**   **Attempt** to place **Peer 11** in **No Access Mode**   **FAIL**

       SWEEP   Zone **1Z1**

☐ **VERIFY**   **MCR** sees zone **1Z1**   **SWEPT**

       PLACE   **Peer 11** in **Mode 24**

☐ **VERIFY**   **MCR** sees **Peer 11** in **No Access**   **MODE 24**

       PLACE   **Peer 11** in **Mode 16**

☐ **VERIFY**   **Peer 11** is in **Controlled Access**   **MODE 16**

☐ **Check for test acceptance of Verify necessary conditions for Mode 24**

1.2 **Verify System Response to Opening a Gate while in Mode 24**

        PLACE   **Peer 11** in **Mode 24**
☐ **VERIFY**   **MCR** sees **Peer 11** in **No Access**   **MODE 24**
        WAIT   For **Beam Imminent Alarm** to stop sounding

        PRESS   **RHIC Primary Beam Stop Withdraw** button in **MCR**
☐ **VERIFY**   **MCR** sees **RHIC CD**   **ENABLED**
☐ **VERIFY**   **MCR** sees **RHIC Permit Link**   **ENABLED**
☐ **VERIFY**   **MCR** sees **RHIC Injection CD**   **ENABLED**

        FOLLOW   Test schedule in Table 1, below

Open gate	Verify Peer 11 go to Mode 2	Verify sweep lost	Verify RHIC CD =RC	Verify Permit Link is disabled	Verify RHIC Inj. CD = RCI	PLACE Peer 11 in Mode 24	Verify Peer 11 in Mode 24 & alarm stop	PRESS RHIC prmy BS w/draw	Verify RHIC CD is enabled	Verify RHIC Permit link is enabled	Verify RHIC Ijn. CD is enabled & on to next gate
2GE1	☐	☐	☐	☐	☐		☐		☐	☐	☐
2GE2	☐	☐	☐	☐	☐		☐		☐	☐	☐
3GI1	☐	☐	☐	☐	☐		☐		☐	☐	☐

Table 1- Test of Gates in Mode 24

☐ **Check for test acceptance of Verify System Response to Opening a Gate while in Mode 24**

1.3 **Verify Entry gates are securely locked in Mode 24**

        PLACE   **Peer 11** in **Mode 24**
☐ **VERIFY**   **MCR** sees **Peer 11** in **No Access**   **MODE 24**
        WAIT   For **Beam Imminent Alarm** to stop sounding

        OPEN   Gate **2GE1** with **#14 Key** and **Simultaneous Release**
☐ **VERIFY**   Attempt to open gate **2GE1** with **#14 Key** and **Simultaneous Release**   **FAIL**
        OPEN   Gate **2GE1** with **Super Blue Card**
☐ **VERIFY**   Attempt to open gate **2GE1** with **Super Blue Card**   **FAIL**

☐ **Check for test acceptance of Verify Entry gates are securely locked in Mode 24**

1.4 **Verify System Response to Pulling a Crash Cord while in Mode 24**

        PLACE   **Peer 11** in **Mode 24**

☐ VERIFY   **MCR** sees **Peer 11** in **No Access**   **MODE 24**

        WAIT   For **Beam Imminent Alarm** to **stop** sounding

        PRESS   **RHIC Primary Beam Stop Withdraw** button in **MCR**

☐ VERIFY   **MCR** sees **RHIC CD**   **ENABLED**

☐ VERIFY   **MCR** sees **RHIC Permit Link**   **ENABLED**

☐ VERIFY   **MCR** sees **RHIC Injection CD**   **ENABLED**

        PULL   Any **Zone 1Z1 crash cord [System #: _____]**

☐ VERIFY   **Peer 11** goes to   **MODE 2**

☐ VERIFY   **Sweep** is   **LOST**

☐ VERIFY   **MCR** sees **RHIC CD**   **DISABLED**

☐ VERIFY   **MCR** sees **RHIC Permit Link**   **DISABLED**

☐ VERIFY   **MCR** sees **RHIC Injection CD**   **DISABLED**

        REARM   **Crash device**

        RESET   **Crash at MCR**

☐ VERIFY   **Crash is**   **RESET**

        PLACE   **Peer 11** in **Mode 24**

☐ VERIFY   **Peer 11** is in **Beam Imminent Mode**   **MODE 24**

        PULL   Any **Zone 1Z1 crash cord [System #: _____]** while
                       alarm is sounding

☐ VERIFY   **Beam Imminent alarm**   **STOPS**

☐ VERIFY   **Peer 11** has moved to   **MODE 2**

☐ VERIFY   **MCR** sees **Zone 1Z1**   **CRASHED**

        PLACE   **Peer 11** in **Mode 8** (Restricted Access)

☐ VERIFY   **Attempt** to go to **Mode 8**   **FAIL**

        REARM   **Crash device**

        RESET   **Crash at MCR**

☐ VERIFY   **Crash is**   **RESET**

        PLACE   **Peer 11** in **Mode 8**

☐ VERIFY   **MCR** sees **Peer 11** in **Restricted Access**   **MODE 8**

        PLACE   **Peer 11** in **Mode 24**

☐ VERIFY   **MCR** sees **Peer 11** in **No Access**   **MODE 24**

        WAIT   For **Beam Imminent Alarm** to stop sounding

        PRESS   **RHIC Primary Beam Stop Withdraw** button in **MCR**

☐ VERIFY   **MCR** sees **RHIC CD**   **ENABLED**

☐ VERIFY   **MCR** sees **RHIC Permit Link**   **ENABLED**

☐ VERIFY   **MCR** sees **RHIC Injection CD**   **ENABLED**

        PULL   Any **Zone 2Z1 crash cord [System #: _____]**

☐ VERIFY   **Peer 11** goes to   **MODE 2**

☐ VERIFY   **Sweep** is   **LOST**

☐	**VERIFY**	**MCR** sees **RHIC CD**	**RC**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**DISABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection CD**	**RCI**

	REARM	**Crash device**	
	RESET	**Crash at MCR**	
☐	**VERIFY**	**Crash is**	**RESET**

	PLACE	**Peer 11** in **Mode 24**	
☐	**VERIFY**	**Peer 11** is in **Beam Imminent Mode**	**MODE 24**

	PULL	Any **Zone 2Z1 crash cord [System #: _____]** while **alarm is sounding**

☐	**VERIFY**	**Beam Imminent alarm**	**STOPS**
☐	**VERIFY**	**Peer 11** has moved to	**MODE 2**
☐	**VERIFY**	**MCR** sees **Zone 2Z1**	**CRASHED**
	PLACE	**Peer 11** in **Mode 8** (Restricted Access)	
☐	**VERIFY**	**Attempt** to go to **Mode 8**	**FAIL**
	REARM	**Crash device**	
	RESET	**Crash at MCR**	
☐	**VERIFY**	**Crash is**	**RESET**
	PLACE	**Peer 11** in **Mode 8**	
☐	**VERIFY**	**MCR** sees **Peer 11** in **Restricted Access**	**MODE 8**

	PLACE	**Peer 11** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 11** in **No Access**	**MODE 24**
	WAIT	For **Beam Imminent Alarm** to stop sounding	

	PRESS	**RHIC Primary Beam Stop Withdraw** button in **MCR**

☐	**VERIFY**	**MCR** sees **RHIC CD**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection CD**	**ENABLED**

	PULL	Any **Zone 2Z2 crash cord [System #: _____]**

☐	**VERIFY**	**Peer 11** goes to	**MODE 2**
☐	**VERIFY**	**Sweep** is	**LOST**
☐	**VERIFY**	**MCR** sees **RHIC CD**	**RC**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**DISABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection CD**	**RCI**

	REARM	**Crash device**	
	RESET	**Crash at MCR**	
☐	**VERIFY**	**Crash is**	**RESET**

	PLACE	**Peer 11** in **Mode 24**	
☐	**VERIFY**	**Peer 11** is in **Beam Imminent Mode**	**MODE 24**

	PULL	Any **Zone 2Z2 crash cord [System #: _____]** while **alarm is sounding**

☐	**VERIFY**	**Beam Imminent alarm**	**STOPS**

☐	**VERIFY**	**Peer 11** has moved to	**MODE 2**
☐	**VERIFY**	**MCR** sees **Zone 2Z2**	**CRASHED**
	PLACE	**Peer 11** in **Mode 8** (Restricted Access)	
☐	**VERIFY**	**Attempt** to go to **Mode 8**	**FAIL**
	REARM	**Crash device**	
	RESET	**Crash at MCR**	
☐	**VERIFY**	**Crash is**	**RESET**
	PLACE	**Peer 11** in **Mode 8**	
☐	**VERIFY**	**MCR** sees **Peer 11** in **Restricted Access**	**MODE 8**
	PLACE	**Peer 11** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 11** in **No Access**	**MODE 24**
	WAIT	For **Beam Imminent Alarm** to stop sounding	
	PRESS	**RHIC Primary Beam Stop Withdraw** button in **MCR**	
☐	**VERIFY**	**MCR** sees **RHIC CD**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection CD**	**ENABLED**

☐ **Check for test acceptance of Verify System Response to Pulling a Crash Cord while in Mode 24**

1.5 Verify System Response to ODH trip while in Mode 24

	PLACE	**Peer 11** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 11** in **No Access**	**MODE 24**
	WAIT	For **Beam Imminent Alarm** to stop sounding	
	PRESS	**RHIC Primary Beam Stop Withdraw** button in **MCR**	
☐	**VERIFY**	**MCR** sees **RHIC CD**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection CD**	**ENABLED**
	TRIP	**ODH sensor** using test button, following **Table 2,** below	

ODH sensor	Trip sensor	Verify Peer 11 stays in Mode 24	Verify BS with-draw ok	Verify Rhic CD is enabled	Verify Permit link is enabled	Ver-ify Rhic Inj. CD enabled	Verify strobe on	Verify son-alert on	Verify fans & vents off	Verify Peer 11 in Mode 24 & alarm stop	Verify Rhic CD is enabled	Verify Rhic Permit link is enabled	Verify Rhic Ijn. CD is enabled & on to next sensor
1AS3/A		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
1AS3/B		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2XAS2/A		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2XAS2/B		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2AS1/A		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2AS1/B		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Table 2 – Test of ODH sensors in Mode 24

☐ **Check for test acceptance of Verify System Response to ODH trip while in Mode 24**

1.6   Test Emergency fan ON/OFF controls at 2GE2 in Mode 24

	PLACE	**Peer 11** in **Mode 24**	
☐	VERIFY	**MCR** sees **Peer 11** in **No Access**	**MODE 24**
	WAIT	For **Beam Imminent Alarm** to stop sounding	
	PRESS	Emergency fan **ON** button at gate **2GE2**	
	WAIT	For **90 sec** timeout counter	
☐	**VERIFY**	Fan **1EF2** is	**ON**
☐	**VERIFY**	Fan **1EF3** is	**ON**
☐	**VERIFY**	Fan **1EF4** is	**ON**
☐	**VERIFY**	Vent **1AV1** is	**OPEN**
☐	**VERIFY**	Vent **1AV2** is	**OPEN**
☐	**VERIFY**	Vent **1AV3** is	**OPEN**
☐	**VERIFY**	Fan **2XEF1** is	**ON**
☐	**VERIFY**	Fan **2EF1** is	**ON**
☐	**VERIFY**	Fan **2EF2** is	**ON**
☐	**VERIFY**	Fan **3EF1** is	**ON**
☐	**VERIFY**	Vent **2XAV1** is	**OPEN**
☐	**VERIFY**	Vent **2XAV2** is	**OPEN**
☐	**VERIFY**	Vent **2XAV3** is	**OPEN**
☐	**VERIFY**	Vent **2AV1** is	**OPEN**
☐	**VERIFY**	Vent **2AV2** is	**OPEN**
☐	**VERIFY**	Vent **3AV1** is	**OPEN**

| | **PRESS** | Emergency fan **OFF** button at gate **2GE2** | |
| | **WAIT** | For **90 sec** timeout counter | |

☐	**VERIFY**	Fan **1EF2** is	**OFF**
☐	**VERIFY**	Fan **1EF3** is	**OFF**
☐	**VERIFY**	Fan **1EF4** is	**OFF**
☐	**VERIFY**	Vent **1AV1** is	**CLOSED**
☐	**VERIFY**	Vent **1AV2** is	**CLOSED**
☐	**VERIFY**	Vent **1AV3** is	**CLOSED**
☐	**VERIFY**	Fan **2XEF1** is	**OFF**
☐	**VERIFY**	Fan **2EF1** is	**OFF**
☐	**VERIFY**	Fan **2EF2** is	**OFF**
☐	**VERIFY**	Fan **3EF1** is	**OFF**
☐	**VERIFY**	Vent **2XAV1** is	**CLOSED**
☐	**VERIFY**	Vent **2XAV2** is	**CLOSED**
☐	**VERIFY**	Vent **2XAV3** is	**CLOSED**
☐	**VERIFY**	Vent **2AV1** is	**CLOSED**
☐	**VERIFY**	Vent **2AV2** is	**CLOSED**
☐	**VERIFY**	Vent **3AV1** is	**CLOSED**

☐   **Check for test acceptance of Test Emergency fan ON/OFF controls at 2GE2 in Mode 24**

1.7   Test MCR reset of Emergency ON/OFF at 2GE2 in Mode 24

☐	**VERIFY**	**MCR** sees **Peer 11** in **No Access**	**MODE 24**

| | **PRESS** | Emergency fan **ON** button at gate **2GE2** | |
| | **WAIT** | For **90 sec** timeout counter | |

☐	**VERIFY**	Fan **1EF2** is	**ON**
☐	**VERIFY**	Fan **1EF3** is	**ON**
☐	**VERIFY**	Fan **1EF4** is	**ON**
☐	**VERIFY**	Vent **1AV1** is	**OPEN**
☐	**VERIFY**	Vent **1AV2** is	**OPEN**
☐	**VERIFY**	Vent **1AV3** is	**OPEN**
☐	**VERIFY**	Fan **2XEF1** is	**ON**
☐	**VERIFY**	Fan **2EF1** is	**ON**
☐	**VERIFY**	Fan **2EF2** is	**ON**
☐	**VERIFY**	Fan **3EF1** is	**ON**
☐	**VERIFY**	Vent **2XAV1** is	**OPEN**
☐	**VERIFY**	Vent **2XAV2** is	**OPEN**
☐	**VERIFY**	Vent **2XAV3** is	**OPEN**
☐	**VERIFY**	Vent **2AV1** is	**OPEN**
☐	**VERIFY**	Vent **2AV2** is	**OPEN**
☐	**VERIFY**	Vent **3AV1** is	**OPEN**

| | **PRESS** | Emergency fan **OFF** button at **MCR** | |
| | **WAIT** | For **90 sec** timeout counter | |

	VERIFY	Fan **1EF2** is	**OFF**
☐	**VERIFY**	Fan **1EF2** is	**OFF**
☐	**VERIFY**	Fan **1EF3** is	**OFF**
☐	**VERIFY**	Fan **1EF4** is	**OFF**
☐	**VERIFY**	Vent **1AV1** is	**CLOSED**
☐	**VERIFY**	Vent **1AV2** is	**CLOSED**
☐	**VERIFY**	Vent **1AV3** is	**CLOSED**
☐	**VERIFY**	Fan **2XEF1** is	**OFF**
☐	**VERIFY**	Fan **2EF1** is	**OFF**
☐	**VERIFY**	Fan **2EF2** is	**OFF**
☐	**VERIFY**	Fan **3EF1** is	**OFF**
☐	**VERIFY**	Vent **2XAV1** is	**CLOSED**
☐	**VERIFY**	Vent **2XAV2** is	**CLOSED**
☐	**VERIFY**	Vent **2XAV3** is	**CLOSED**
☐	**VERIFY**	Vent **2AV1** is	**CLOSED**
☐	**VERIFY**	Vent **2AV2** is	**CLOSED**
☐	**VERIFY**	Vent **3AV1** is	**CLOSED**

☐ **Check for test acceptance of Test MCR reset of Emergency ON/OFF at 2GE2 in Mode 24**

1.8   Test local fan controls in service building 1002B Mode 24

☐	**VERIFY**	**MCR** sees **Peer 11** in **No Access**	**MODE 24**
	PRESS	Fan **ON** button at fan box	
☐	**VERIFY**	**1002B fan** is	**ON**
☐	**VERIFY**	**1002B vent** is	**OPENED**
	TURN OFF	**1002B fan** using **MCR Fan OFF button**	
☐	**VERIFY**	Attempt to turn off **1002B fan** using **MCR Fan OFF button**	**FAIL**
	PRESS	Fan **OFF** button at fan box	
☐	**VERIFY**	**1002B fan** is	**OFF**
☐	**VERIFY**	**1002B vent** is	**CLOSED**

☐ **Check for test acceptance of Test local fan controls in service building 1002B Mode 24**

1.9   Test Division A loss of Remote I/O in Mode 24

☐	**VERIFY**	**CD** key switch is set for	**XY ARCS**
☐	**VERIFY**	**MCR** sees **Peer 11** in **No Access**	**MODE 24**
	PRESS	**RHIC Primary Beam Stop Withdraw** button in **MCR**	
☐	**VERIFY**	**MCR** sees **RHIC Injection Inhibit**	**OFF**
☐	**VERIFY**	**MCR** sees **RHIC Ring Inhibit**	**OFF**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection CD** on CD page	**DISABLED**
	UNPLUG	Remote **I/O** cable from **Scanner module** in **Peer 11A**	
☐	**VERIFY**	**MCR** sees **CDev I/O**	**NG**
☐	**VERIFY**	**MCR** sees **Peer 11 Div A** go to	**MODE 2**
☐	**VERIFY**	**MCR** sees **RHIC** Injection Inhibit **Div A**	**ON**

☐	**VERIFY**	**MCR** sees **RHIC** Ring Inhibit **Div A**	**ON**
☐	**VERIFY**	**MCR** sees **Div A RHIC Permit Link**	**DISABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection CD**	**DISABLED**

REPLACE   Remote **I/O** cable at **Scanner module** in **Peer 11A**

RESET   **NG CDev I/O** condition at **MCR**
☐ **VERIFY**   **MCR** sees **CDev I/O**   **OK**

☐ **Check for test acceptance of Test Division A loss of Remote I/O in Mode 24**

1.10   Test Division B loss of Remote I/O in Mode 24

☐	**VERIFY**	**CD** key switch is set for	**XY ARCS**
☐	**VERIFY**	**MCR** sees **Peer 11** in **No Access**	**MODE 24**
	PRESS	**RHIC Primary Beam Stop Withdraw** button in **MCR**	
☐	**VERIFY**	**MCR** sees **RHIC Injection Inhibit**	**OFF**
☐	**VERIFY**	**MCR** sees **RHIC Ring Inhibit**	**OFF**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection CD** on CD page	**DISABLED**

UNPLUG   Remote **I/O** cable from **Scanner module** in **Peer 11B**

☐	**VERIFY**	**MCR** sees **CDev I/O**	**NG**
☐	**VERIFY**	**MCR** sees **Peer 11** go to	**MODE 2**
☐	**VERIFY**	**MCR** sees **RHIC Injection Inhibit Div B**	**ON**
☐	**VERIFY**	**MCR** sees **RHIC Ring Inhibit Div B**	**ON**
☐	**VERIFY**	**MCR** sees **Div B RHIC Permit Link Div B**	**DISABLED**
☐	**VERIFY**	**MCR** sees **Div B RHIC Injection CD**	**DISABLED**

REPLACE   Remote **I/O** cable at **Scanner module** in **Peer 11B**

RESET   **NG CDev I/O** condition at **MCR**
☐ **VERIFY**   **MCR** sees **Cdev I/O**   **OK**

☐ **Check for test acceptance of Test Division B loss of Remote I/O in Mode 24**

1.11   Sweep tests in Mode 24

	RESET	**Peer 11 gates:** 1GS1, 1EL1, 1GI1, 2MD1, 2GE1, 2MD2, 2GI1, 2GE2, 2MD3, 2EL1, and 3GI1	
☐	**VERIFY**	**Peer 11 gates:** ☐ 1GS1, ☐ 1EL1, ☐ 1GI1, ☐ 2MD1, ☐ 2GE1, ☐ 2MD2, ☐ 2GI1, ☐ 2GE2, ☐ 2MD3, ☐ 2EL1, ☐ 2ED1, ☐ 3GI1 are	**RESET**
	SWEEP	**Peer 11 Zones:** 1Z1, 2Z1, 2Z2	
☐	**VERIFY**	**Peer 11 Zones:** ☐ 1Z1, ☐ 2Z1, ☐ 62Z2 are	**SWEPT**
	PLACE	**Peer 11** in **Mode 24**	
☐	**VERIFY**	**Peer 11** is in **No Access**	**MODE 24**
	PLACE	**Peer 11** in **Mode 16**	
☐	**VERIFY**	**Peer 11** is in **Controlled Access**	**MODE 16**

FOLLOW   **Test Schedule in Table 3, below**

Zone	Gate	Open gate	Verify sweep lost	Verify cannot sweep with gate open	Close gate	Force sweep	Verify cannot go to Mode 24	Reset gate	Verify can go to Mode 24	Go to Mode 16 & next gate
1Z1	1GI1		☐	☐			☐		☐	
2Z1	2GE1		☐	☐			☐		☐	
2Z2	2GE2		☐	☐			☐		☐	

Table 3 – Sweep tests in Mode 24

☐ **Check for test acceptance of Sweep tests in Mode 24**

1.12 Chipmunk Tests in Mode 24

	PLACE	**Peer 11** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 11** in **No Access**	**MODE 24**
	WAIT	For **Beam Imminent Alarm** to stop sounding	

      PRESS   **RHIC Primary Beam Stop Withdraw** button in **MCR**

☐ **VERIFY**   **MCR** sees **RHIC CD**   **ENABLED**
☐ **VERIFY**   **MCR** sees **RHIC Permit Link**   **ENABLED**
☐ **VERIFY**   **MCR** sees **RHIC Injection CD**   **ENABLED**

      ATTACH   **Test Box** to **Chipmunk** prior to test

C'munk	Press & verify div A trip	Verify Peer 11 stays in mode 24	Verify div A Rhic CD disabled	Verify div A Rhic permit link disabled	Verify div A Rhic Inj.CD disabled	Press pmry BS with-draw	Verify div A Rhic CD enabled	Verify div A Rhic permit link enabled	Verify div A Rhic Ijn. CD enabled	Goto table 5 for div B trip
C64		☐	☐	☐	☐		☐	☐	☐	
C65		☐	☐	☐	☐		☐	☐	☐	

Table 4 – Division A trip test in Mode 24

C'munk	Press & verify div B trip	Verify Peer 11 stays in mode 24	Verify div B Rhic CD disabled	Verify div B Rhic permit link disabled	Verify div B Rhic Inj.CD disabled	Press pmry BS with-draw	Verify div B Rhic CD enabled	Verify div B Rhic permit link enabled	Verify div B Rhic Ijn. CD enabled	Goto table 6 for div A fails
C64		☐	☐	☐	☐		☐	☐	☐	
C65		☐	☐	☐	☐		☐	☐	☐	

Table 5 – Division B Trip test in Mode 24

C'munk	Press & verify div A fails	Verify Peer 11 goes to mode 2	Verify div A Rhic CD disabled	Verify div A Rhic permit link disabled	Verify div A Rhic Inj.CD disabled	Place Peer 11 in mode 24 & alarm stop	Press pmry BS with-draw	Verify div A Rhic CD enabled	Verify div A Rhic permit link enabled	Verify div A Rhic Ijn. CD enabled	Goto table 7 for div B fails
C64		☐	☐	☐	☐			☐	☐	☐	
C65		☐	☐	☐	☐			☐	☐	☐	

Table 6 – Division A Fails test in Mode 24

C'munk	Press & verify div B fails	Verify Peer 11 goes to mode 2	Verify div B Rhic CD disabled	Verify div B Rhic permit link disabled	Verify div B Rhic Inj.CD disabled	Place Peer 11 in mode 24 & alarm stop	Press pmry BS with-draw	Verify div B Rhic CD enabled	Verify div B Rhic permit link enabled	Verify div B Rhic Ijn. CD enabled	See end of test instrns below
C64		☐	☐	☐	☐			☐	☐	☐	
C65		☐	☐	☐	☐			☐	☐	☐	

Table 7 – Division B Fails test in Mode 24

End of Test Instructions:

	DETACH	**Test Box** from **Chipmunk** after test	
	CONNECT	**Cable to Chipmunk**	
	RESET	Chipmunk **faults** at **MCR**	
☐	**VERIFY**	**MCR** sees **Chipmunk**	**OK**

        ATTACH   **Test Box** to next **Chipmunk** for test / or **end Chipmunk test**
        START   **Test sequence** at **Table 4**

☐   **Check for test acceptance of Chipmunk Tests in Mode 24**

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

Date: _____/_____/_____

TTL: Sign for completion of final testing: _____

Date: _____/_____/_____